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WE GUARANTEE that of this issue 10,011 copies were printed; that of those 10,011 copies 8,572 were mailed to regular paid subscribers to the Railway Age Gazette and the Railway Age Gazette, Mechanical Edition; 150 were provided for counter and news companies' sales; 189 were mailed to advertisers; 100 were provided for bound volumes, and 1,000 for distribution at Atlantic City.

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In considering the qualifications of a man for the position of car inspector, it should be borne in mind that the duties of an inspector in a terminal yard differ somewhat from those of one on interchange work. A terminal inspector must be qualified to determine whether or not the cars which he inspects are defective in any way, and what repairs are necessary to place them in such a condition that they will be safe to run. On interchange work, besides these qualifications, an inspector requires a much more detailed and thorough knowledge of the M. C. B. rules of interchange and of the law governing the application of safety appliance details. He must also determine the serviceability of a car which is about to be interchanged and pass upon the matter of car clearances. From a consideration of the foregoing it would seem that the terminal yard inspector is, from his experience, the man best fitted to develop into an interchange inspector.

Car Inspectors

The report of the Committee on Boiler Washing, which was referred to letter ballot for adoption as recommended practice, is deserving of special note and is of such a valuable nature that it will not detract from it to use it as an example of what might be done under the plan of reorganization for all the mechanical associations, suggested by President Gaines in his opening address. In brief, this subject could have been referred by the supreme executive committee to what is now the Master Boilermakers' Association for action on matters of detail. After receiving the thorough attention of this branch of the combined associations, the findings of the committee, as modified in the convention, could be referred to the higher association for action on matters which could not be settled satisfactorily by the previous committee, and for final action in the adoption of standards. As previously stated, we use this merely as an example to point out the possibilities of such a combination as President Gaines suggested.

How Would It Work?

Why was the American Railway Association box car made 36 ft. long? This is a question that was asked recently and which we have heard repeated on a number of occasions. An example of the difficulty that arises because of the 36-ft. length is afforded by the experience of a road in the southwest which has to haul many cars of this dimension empty in one direction because lumber manufacturers refuse to load them, the reason being that much of the material shipped is in 18-ft. lengths, which run two or three inches over length, the result being that it is impossible to load two lengths in a 36-ft. car. This is true of other commodities besides lumber. Would it not be advisable to adopt 40 ft or possibly 40 ft. 6 in. for the inside length of box cars and eliminate the 36-ft. dimension for the future? There is no question that this would result in an increase in revenue-ton-miles for the freight equipmtnt on a number of roads.

The 36-Foot Box Car

It has been demonstrated that in order to obtain the best results in fuel economy the co-operation of all the departments of a railroad is absolutely necessary. The car department is in a position to very materially aid in this respect. Hot-boxes have always been a live issue and they are now being eliminated to a very large extent. It must not be forgotten, however, that a poorly maintained journal will have a very marked effect on the tonnage an engine can handle, which, of course, means increased fuel consumption per ton-mile. Tests have shown that the power required to haul one car dry or scantily lubricated would be sufficient to haul six or eight cars properly lubricated. Thus it will be seen that if the journals are not in the proper condition it may mean a difference of 10 or 15 cars per train. Journals in this condition will not necessarily cause a hot-box and it is therefore difficult to detect them. The only way in which the problem may be satisfactorily handled is in having adequate inspections and a corps of car inspectors and maintainers that will do their work thoroughly and conscientiously.

Maintenance of Car Journals

Electrical engineers have on more than one occasion made the statement that a man, to be successful in the electrical operation of railways, must be trained in the electrical field. The report of the Master Mechanics' Association committee on Maintenance and Operation of Electrical Equipment and the discussion of the report, brought out evidence which distinctly refutes this. G. W. Wildin, mechanical superintendent of the New York, New Haven & Hartford, a road which has gone through all the trials and tribulations of pioneer electrification, is emphatic in his opinion that the best results from electrified steam railways are to be obtained by the employment of men already trained in the operation of a railroad by steam locomotives. There is no great mystery about electrical apparatus and it must be conceded that whether the motive power be steam, gas or electricity, the equipment is all based on mechanical principles. It is probably advisable to have consulting engineers on the mechanical department

Steam Railway Men and Electrical Operation

staff to deal with matters which are distinctly electrical, but as far as the matters of operation and maintenance in general are concerned they require only the common sense and knowledge of railway conditions, with which any successful mechanical department man is equipped. Such roads as the New Haven, the New York Central and the Pennsylvania, which were among the first to employ electric traction to any extent, have gone through the pioneer stages of electrical operation, and their experience in matters of this kind should be of much more value to the roads now beginning or contemplating electrification than the opinions of electrical engineers who, no matter how competent they may be as electrical engineers, are seldom thoroughly trained as railroad men.

With the Exhibitors

The exhibitors are, of course, anxious to get the attention of the railway men and explain the merits of their devices to them: On the other hand the railroad men are just as desirous of getting in touch with and studying devices which they have reason to believe will help them solve their problems and get better results. It is interesting to note how systematically some of the roads are making use of the opportunity of examining and studying devices and equipment which is on exhibition. In one case the exhibit was first given a general survey by individual members of a delegation and then all of them went together to study those devices which specially appealed to the individual members of the party. In other cases visitors have come with instructions to specially examine and report on certain items or to make a written report on features which they had examined and believe would relieve certain troublesome conditions. Probably at no meeting of the year can so many experts be found together, who are available for consultation and who are only too glad to give advice. Simon-pure railway supply salesmen have in many cases been entirely displaced by sales engineers or engineering experts. Not the least of the advantages of attendance at the convention is the privilege of meeting and consulting with these men.

Variable Load Brakes for Freight Cars

The legal difficulty which the Virginian Railway experienced recently in the handling of long freight trains with the hand brake has once more accentuated the demand for the variable load brake. As stated in an article published in the *Railway Age Gazette* of May 14, page 1018, the United States Circuit Court of Appeals, Fourth District, has held that the use of hand brakes in the operation of trains is contrary to law. This decision is of special importance to those roads operating on heavy grades. Walter V. Turner, chief engineer of the Westinghouse Air Brake Company, in a paper before the Railway Club of Pittsburgh has shown that in order to handle long trains on heavy grades satisfactorily it is necessary to either increase the brake pipe pressure beyond practical limits, to use enough empty cars to furnish the necessary additional braking force, or to reduce the speed, the train tonnage, or the weight and capacity of the cars to a safe minimum. The empty and load brake will make these precautions unnecessary and not only permit of satisfactory operation of all trains on grades, and by giving safety and uniform brake operation, will permit of materially increasing the road capacity both for grade and level work. With the application of this type of brake, a more uniform braking force is obtained throughout the train. For example, assuming an empty car of 54,000 lb. which, when loaded, will weigh 208,000 lb. and braked empty to give 60 per cent nominal braking force, only 15.6 per cent braking force is obtained on the loaded car with the standard brake equipment, whereas with the empty and load brake 40 per cent braking force will be obtained. It will be seen that the difference between the braking force of the loaded and empty cars equipped with the standard brake is much greater than when they are equipped with the empty and load brakes. This greatly reducing the damage to lading and equipment as well as making safe the operation of all trains on all grades. In addition to making it possible to better operate the trains, it will be found possible to materially increase the length of these trains, tests having shown that 7,700 tons can be safely handled.

DEFECTIVE BOX CARS

THERE is a saying to the effect that "success is the result of keeping everlasting at it." We have "kept at" several car department matters for some years in order to point out where improvements can be made, and whether or not our efforts have been of any assistance in accomplishing it, there is no doubt that improvement has been made along these particular lines. Some of these matters, however, are susceptible of still further improvement and some are as yet a long distance from perfection.

The condition of box car roofs, while considerably improved over what it was a few years ago, is still far from satisfactory in many cases. The smallest leak in a roof is likely to let enough water through to cause damage to the lading to an extent that will result in much labor for the claim department and the loss of a considerable sum of money to the company, while there is always the danger of an incensed shipper turning his business over to another road because of such an occurrence. Leaky roofs are taken care of on at least one railway by an inspection system which includes passing the cars under a specially devised sprinkler after the roof has been repaired.

In studying the prevention of damage to and loss of the contents of cars, the side doors naturally come into prominence. Like the roof situation, the box car side door has been greatly improved during the past two or three years, but there is still need of continued effort to place this part in a condition that will decrease the trouble from loss and damage as well as the danger of doors side-swiping passenger trains on double track. Careful attention should be given to bottom door guides and locking facilities; it is still common to see cars fitted with wooden door stops held in place with only two small bolts. In some cases the use of a steel door has been resorted to and, while it has received some very severe criticism, the results obtained from it in the matter of protection to lading are gratifying.

Much more attention could well be given to the inspection of the methods of loading box cars. Not all shippers know that the Master Car Builders' Association has formulated a set of rules for loading all classes of cars, and if the fact that there are such rules were brought to their attention in the right way, there is little doubt that they would endeavor to conform to them for their own sake if not for the railways, and both would benefit thereby. Local freight agents should familiarize themselves with the more important requirements and thus be of assistance to the shipper in getting the shipments properly placed in the cars and effectively blocked in place. A practice that is worthy of mention in this connection is that of a large eastern road which has obtained very satisfactory results from the appointment of a committee consisting of representatives from the traffic department, the operating department and the mechanical department, to confer with the shippers, inspectors and traffic department men in improving loading conditions. The matters to which we have called attention are a few which need constant attention and while, as previously stated, we have referred to them on many occasions before, we feel that too much attention cannot be given to them.

PROGRAM FOR THE WEEK

MASTER CAR BUILDERS' CONVENTION

MONDAY, JUNE 14, 1915

Address by the President	9.30 A. M. to 10.30 A. M.
Reading of the minutes of the 1914 Convention	10.30 A. M. to 10.35 A. M.
Report of secretary and treasurer	10.35 A. M. to 10.50 A. M.
Assessment and announcement of annual dues; appointment of committees on correspondence, resolutions, obituaries, etc.	10.50 A. M. to 11.00 A. M.
Election of auditing committee	11.00 A. M. to 11.05 A. M.
Unfinished business	11.05 A. M. to 11.10 A. M.
New business	11.10 A. M. to 11.20 A. M.
Discussions of reports on:	
Nominations	11.20 A. M. to 11.30 A. M.
Revision of standards and recommended practice	11.30 A. M. to 12.00 M.
Train brake and signal equipment	12.00 M. to 12.30 P. M.
Brake shoe and brake beam equipment	12.30 P. M. to 1.00 P. M.
Car wheels	1.00 P. M. to 1.30 P. M.

AFTERNOON SESSION—3.00 O'CLOCK P. M.

The Executive Committee decided that it would be best to have a session devoted exclusively to a discussion of the revision of the Rules of Interchange and that it form a part of the proceedings.

At this session the following reports of committees will be considered:

1. Arbitration Committee.
2. Revision of prices for labor and material.
3. Settlement prices for reinforced wooden cars.
4. Compensation for car repairs.

ENTERTAINMENT

10.30 A. M.—*Orchestral Band Concert.* Entrance Hall, Million-Dollar Pier.

3.30 P. M.—*Orchestral Band Concert.* Entrance Hall. Million-Dollar Pier.

9.00 P. M.—*Social Gathering and Informal Dance.* Special Feature, Costume Recital, Miss Betty Lee. Ball Room, Million-Dollar Pier. Don Richardson Orchestra.

TUESDAY JUNE 15, 1915

Discussion of reports on:	
Couplers	9.30 A. M. to 10.30 A. M.
Safety appliances	10.30 A. M. to 10.45 A. M.
Rules for loading materials	10.45 A. M. to 11.00 A. M.
Overhead inspection	11.00 A. M. to 11.10 A. M.
Interline inspection	11.10 A. M. to 11.25 A. M.
Car construction	11.25 A. M. to 12.00 M.
Specifications and tests for materials	12.00 M. to 12.30 P. M.
Tank cars	12.30 P. M. to 12.45 P. M.
Individual paper—What is the value of a patent? By Mr. Paul Synnestvedt	12.45 P. M. to 1.30 P. M.

ENTERTAINMENT

10.30 A. M.—*Orchestral Band Concert.* Entrance Hall. Million-Dollar Pier.

3.30 P. M.—*Orchestral Band Concert.* Entrance Hall. Million-Dollar Pier.

9.30 P. M.—*Informal Dance.* Special Feature. Costume Recital, Miss Betty Lee. Ball Room, Million-Dollar Pier. Don Richardson Orchestra.

WEDNESDAY JUNE 16, 1915

Discussion of reports on:	
Train lighting and equipment	9.30 A. M. to 10.00 A. M.
Car trucks	10.00 A. M. to 10.30 A. M.
Draft gear	10.30 A. M. to 10.45 A. M.
Joint meeting with A. R. M. M. Assn.	10.45 A. M. to 11.00 A. M.
Individual paper—Impact between freight cars in switching service. By Prof. L. E. Endsley	11.00 A. M. to 11.30 A. M.
Topical discussion:	
Air brake maintenance	11.30 A. M. to 11.45 A. M.
Unfinished business; Reports of Committees on Correspondence, Resolutions and such other committees as may be named during the convention	11.45 A. M. to 12.00 M.
Election of officers	12.00 M. to 1.30 P. M.

FIRST AID PRECAUTIONS

In case of accident a nurse or interne will be found at a desk in the end of Machinery Hall nearest the Boardwalk. First aid supplies will be available and in case of serious injury arrangements may be made for prompt expert service.

PRESIDENT CRAWFORD HONORED

Few, if any, motive power men have ever been able to boast of having a Doctor's degree. In fact, at the moment, we do not remember a single one. This unusual distinction was conferred on D. F. Crawford, president of the M. C. B. Association, and general superintendent motive power of the Pennsylvania Lines west of Pittsburgh, last week by the State University of Kentucky. He received the degree of Doctor of Engineering and was also initiated into TAU BETA PI, the honorary engineering or scientific society. It was this that prevented his attendance at the Master Mechanics' convention last week.

$6,000,000 RUSSIAN ORDER

The following item dated Philadelphia, June 12, is taken from the New York Times of yesterday:

"The Baldwin Locomotive Works has received a cable order from the Russian Government for 250 locomotives to be built before the close of the year.

"The order, which approximates $6,000,000, is one of the largest ever booked by the Baldwin Company, and means that the concern's big plants in this city and Eddystone, will be worked to capacity for months.

"Alba B. Johnson, president of the Baldwin Company, confirmed the receipt of the order. It was declared that the orders placed with the Baldwin Company by the Allies now foot up to more than $20,000,000."

ANNUAL MEETING OF THE R. S. M. A.

The annual meeting of the Railway Supply Manufacturers' Association was held in the Convention Hall at twelve o'clock Saturday.

President Johnson referred briefly to the work necessary to make the association a success. He regretted that the attendance of the supply men was below that of last year but said that there was enough money in the treasury to meet all obligations. He expressed his appreciation of the support of the executive committee, by whose co-operation and work he had been enabled to practically eliminate all "kicks" this year. The only serious complaint was the lighting in the Exhibition Hall the first two days due to generator trouble, which, of course, could not be foreseen.

Of exhibit space, 70,538 square feet were taken this year as against 82,218 in 1914—a decrease of about 14 per cent.

The following officers were elected for the year 1915-1916: President, Oscar F. Ostby; vice-president, Edmund H. Walker; Members of the Executive Committee: First District, J. G. Platt,

Hunt-Spiller Manufacturing Corporation; Second District, C. D. Eaton, American Car & Foundry Company; Fourth District, John F. Schurch, Damascus Brake Beam Company; Seventh District, C. B. Cass, Westinghouse Air Brake Co.

The new president in expressing his appreciation of the honor conferred upon him, stated that it would be his endeavor to work at all times for the good of the association; that he wanted the support of and suggestions from the members and as their servant would do what was wanted for the best interests of all.

A hearty and unanimous vote of thanks was given to the retiring officers.

CHICAGO & NORTH WESTERN CLUB

A large number of the members of the Chicago & North Western Club, which was formed at the convention last year, held an informal meeting on the porch of the Shelburne on Saturday evening at 8.30 o'clock. There were about 18 members present, presided over by H. T. Bentley. After a short meeting, in which Mr. Bentley spoke to the members and extended the best wishes of Mr. Quayle, who unfortunately could not get to the conventions this year, the members attended the vaudeville show at the Hippodrome. R. B. Moore, superintendent of motive power of the Denver & Rio Grande, was indisposed and could not attend the meeting. John P. Neff was appointed a committee of one to extend the sympathy of the club to him.

REGISTRATION FIGURES

The number of railroad members registered at the conventions, as shown by the third enrollment book, issued on Saturday morning, is only three less than for 1913. While it is 53 less than the number registered for the same period last year, it must be remembered that the Master Car Builders' Association met first last year and that the attendance at that convention is ordinarily larger than for the Master Mechanics' convention, so that as far as railroad men are concerned the record is a most gratifying one. As noted in the comments on the registration for the first two days, the principal falling off as compared with two years ago is in the number of supply men, there being exactly 400 less this year than in 1913.

COMPARATIVE REGISTRATION—THE THIRD ENROLLMENT LIST FOR 1911-12-13-14-15.

	1911	1912	1913	1914	1915
Members M. M. and M. C. B.	612	303	489	539	486
Special Guests	331	365	373	360	299
R. R Ladies	401	256	345	269	264
Supply Ladies	355	208	282	254	208
Supply Men	1572	1408	1516	1349	1116
Totals	3271	2540	3005	2771	2373

RAILWAY CLUB SECRETARIES' ANNUAL MEETING

At the annual meeting of the Society of Railway Club Secretaries, held Saturday morning at the Marlborough-Blenheim, Chairman J. B. Anderson, of the Railway Club of Pittsburgh, presided. Other members present were New York Railroad Club and Central Railway Club, Harry D. Vought; Canadian Railway Club, James Powell, Montreal; Richmond, Va. Club, F. O. Robinson; Southern and Southwestern Club, A. J. Merrill, Atlanta. B. W. Frauenthal of the St. Louis Club wired regrets, being detained by official railroad engagements.

A report was received that the organization of the Society of Technical Associations Secretaries had been completed with Mr. Vought as president and Bradley Stoughton of the Society of Mining Engineers as secretary-treasurer.

The advisability of amalgamating with this new society was discussed and held over for another year, the society to be satisfied with recognition as one of several groups organizations.

Advices were received of new railroad clubs which will be invited to unite with the Society of Club Secretaries.

Since the last meeting more than 7,000 copies of the Index of Subjects published by the society have been distributed to

ENROLLMENT COMMITTEE

Top Row, Left to Right—L. D. Mitchell (Detroit Graphite Co.), F. N. Bard (Barco Brass & Joint Co.), H. G. Thompson (Edison Storage Battery Co.), C. W. Beaver (Yale & Tower Mfg. Co.), and C. H. Gayetty (Quaker City Rubber Co.)

Bottom Row—W. J. Fleming, Jr. (Automatic Ventilator Co.), F. E. Harrison (W. L. Brubaker & Bro.), F. H. Smith (Gold Car Heating & Lighting Co), H. A. Brown, Chairman (Pocket List of Railroad Officials), G. A. Barden (Chicago Pnuematic Tool Co.), T. D. Starr (Wm. C. Robinson & Son Co.), J. A. Stevens (F. W. DeVoe & C. T. Raynolds Co.), and R. F. Moon (Westinghouse Electric & Mfg. Co.).

members of the railway clubs and educational institutions.

Much time was given to the consideration of methods and practices of the various clubs, as a result of which each secretary received advantageous information for future use.

Officers elected for the ensuing year are: Chairman, A. J. Merrill, Atlanta; vice chairman, W. E. Cade, Jr., Boston; secretary-treasurer, Harry D. Vought, New York.

TRACK EXHIBIT

The exhibit on the Philadelphia & Reading tracks near the Boardwalk includes, beside the Philadelphia & Reading 4-4-4 type locomotive, which was described in the *Daily Railway Age Gazette* of June 9, a Gilman-Taylor dump car, a Southern Railway dynamometer car, an Erie Railroad hopper car, and a convertible general service or ballast car.

The Gilman-Taylor car is exhibited by the Goodwin Car Company and is an air dump and air replacing ballast car for either center or side dump. It has a capacity of 100,000 lb. and weighs 53,000 lb. The Southern Railway dynamometer car is one which has recently been added to the testing equipment of that road and is exhibited by the Burr Company, Chicago. The Erie hopper car is fitted with Barber double action trucks. It is 40 ft. 6 in. long, and has a capacity of 2,646 cu. ft., or 140,000 lb., while the weight is 60,700 lb. The convertible general service or ballast car is exhibited by the Enterprise Railway Equipment Company and has a capacity of 100,000 lb. and a weight of 49,800.

W. J. TOLLERTON

W. J. Tollerton, who was elected third vice-president of the Master Mechanics' Association at its closing session last Friday, made a splendid record in testifying in the arbitration proceedings in the Western engineers' and firemen's wage controversy in Chicago last spring. Under the most difficult conditions, he set forth clearly the railroad side of the case and made a most enviable record. The association undoubtedly made a wise selection in honoring him with a position on its official staff.

Mr. Tollerton was born in St. Paul, Minn., in 1870, and was educated in the public and high schools of that city. He entered the service of the St. Paul & Duluth, now part of the Northern Pacific, as a machinist apprentice and subsequently became a fireman on the Chicago, St. Paul, Minneapolis & Omaha. From 1890 to 1896 he was foreman and then general foreman on the Union Pacific; he then became master mechanic on the Utah division of the Oregon Short Line; in 1903 he was made master mechanic of the Idaho, Utah and Montana division of that road, with headquarters at Pocatello, Idaho. From July, 1906, to April, 1907, he was superintendent of motive power of the Chicago, Rock Island & Pacific in charge of the lines west of the Mississippi River, with headquarters at Topeka, Kans. From April, 1907, to May, 1912, he was assistant general superintendent of motive power of the Rock Island Lines, with headquarters at Chicago. For the following eight months he was mechanical superintendent of the Rock Island Lines and on January 1, 1913, was made general mechanical superintendent, which position he now holds.

THE VAUDEVILLE ENTERTAINMENT

There was a goodly crowd out Saturday night to attend the vaudeville entertainment in the Hippodrome. George Carr, chairman of the entertainment committee, and his associates had worked hard in preparing for the event in order to insure an enjoyable evening to all. Everything would have moved like clockwork had it not been for the inexcusable blunder of some of the pier people in handling the moving picture feature. Through the courtesy of D. F. Crawford, general superintendent of motive power, Pennsylvania Lines West, an intensely interesting film was obtained of the moving of the Muskegon River bridge, a detailed description of which appeared in the *Railway Age Gazette* some weeks ago. Henry Ford, head of the Ford Motor Company, supplied a film story of his wonderful plant, which showed graphically every step in making an automobile from the raw material to the finished machine. Arrangements had been made with the pier people to place their regular machine operator at the disposal of the committee. Instead, however, they supplied an old machine, which proved to have a cracked gear and broke down entirely, making a fizzle of this part of the program and unfortunately throwing a damper on things until George Carr came to the rescue and started the vaudeville acts. These were furnished by Francis Rockefeller King direct from the B. F. Keith circuit.

The vaudeville program was opened by Natalie and Ferrari in a whirlwind dancing specialty, followed by Nonette, the gypsy violinist, who was easily the hit of the evening. Her sweet voice and wonderful handling of the instrument won her audience, who would gladly have kept her there all evening, as evidenced by their applause. Claude Golden executed some difficult card tricks and was followed by the inimitable Charlie Case, the man who talks about his father. The closing performance was by Horace Wright and Rene Dietrich, whose happy melange of high-class and popular songs placed a finishing touch to a well-planned program.

Mr. King had sent to New York for the last film of that prince of comedians, Charlie Chaplin, which unfortunately could not be shown on account of the disabled machine. Both the films furnished by Mr. Crawford, of the Pennsylvania, and Mr. Ford will be shown Monday evening in the ballroom on the pier. Don Richardson furnished the music, which, needless to say, was appreciated. The committee in charge was C. W. Floyd Coffin, chairman; W. K. Krepps, J. P. Landreth, R. J. Faure, J. F. Forney, C. D. Eaton, G. E. Ryder.

TENTH ANNUAL CORNELL DINNER

Cornell alumni at the conventions held their tenth annual dinner at Barnay's on Saturday evening. This meeting was particularly enjoyed by the 30 present because of the stereopticon views of the University and the description of the recent changes given by Professor Kimball, who came to Atlantic City for this meeting. He discussed informally the methods and objects of the faculty, particularly that of Sibley College of Engineering, and made clear its real desire for close, active cooperation with the alumni. After the discussion of the newer courses of study now being offered and the expanding practical research work undertaken in the laboratories, views of the present campus were thrown on the screen. These pictures were a revelation to most of the older graduates, and showed them that the university as they knew it ten or fifteen years ago is now but a small section of the whole. The new dormitories now under construction through the energies of Mr. Bolt, and the new athletic field and the armory, which is to be the largest in the country, aroused enthusiasm.

It appears that there are now over 5000 students, of which 500 are women, enrolled in regular four year courses. This excludes all summer and short time students. The growth of the college of agriculture, both in equipment, buildings and students has been remarkable. The college of engineering also has shown a healthy growth when the fact that the entrance requirements are the highest in the country is understood.

A number of the usual regular attendants at these dinners were absent this year because of illness or reunions at Ithaca. F. F. Gaines and J. F. DeVoy were particularly missed. At the suggestion of President C. D. Young, a telegram of regret was dispatched to the latter.

Mr. W. L. Bliss, '90, United States Light and Heating Company, was elected president and Mr. A. S. Lewis, '02,

Chicago-Cleveland Car Roofing Company, was re-elected secretary for next year.

Those present included the following:

E. A. Averill, Standard Stoker Co., Inc.; A. R. Ayres, Principal Assistant Engineer, New York Central; F. N. Bard, Barco Brass and Joint Co.; W. L. Bliss, U. S. Light and Heating Co.; F. T. Connor, Carbon Steel Co.; R. S. Cooper, Independent Pneumatic Tool Co.; A. M. Darlow, Supt. Motive Power, Buffalo and Susquehanna; S. W. Edlund, Greenlaw Mfg. Co.; E. S. Foote, Cutler-Hammer Mfg. Co.; G. S. Goodwin, Mechanical Engineer, Rock Island Lines; M. H. Haig, Mechanical Engineer, Santa Fe; W. O. Kellogg, General Electric Co.; A. S. Lewis, Chicago-Cleveland Car Roofing Co.; C. F. Meyer, Landis Machine Co.; H. G. Macdonald, Standard Steel Car Co.; Ralph McCarty, Alleghany Steel Co.; J. N. Mowery, Keystone Equipment Co.; J. C. Nulsen, American Malleable Casting Assn.; F. H. Philbrick, Midvale Steel Co.; G. A. Post, Jr., Standard Coupler Co.; W. G. Ransom, Bettendorf Co.; W. E. Ricketson, Mechanical Engineer, Big Four; G. W. Ristine, Jr., Pressed Steel Car Co.; H. A. Rodgers, Woven Steel Hose and Rubber Co.; L. H. Snyder, Joseph Dixon Crucible Co.; F. M. Whyte, Hutchins Car Roofing Co.; C. D. Young, Engineer of Tests, Pennsylvania, and Halsted Little, Princeton 1910, Detroit Twist Drill Co., and Mr. John Thomas, of the Standard Paint Co. of New York.

THE GOLF TOURNAMENT

The second annual golf tournament in connection with the conventions took place at the Sea View Golf Club yesterday. The tournament consisted of an 18-hole medal play handicap and an 18-hole kicker's handicap. Three prizes were to have been awarded in each contest, but there were ties in each, and in consequence the awards were not made. The various ties may be played off on Monday or Tuesday, but the entertainment committee would greatly prefer to have them played off Monday afternoon in order that the prizes may be awarded at the informal dance Monday night.

Four players were tied for the low net score in the medal play handicap. These, with their scores, were as follows: George A. Post, Jr., 98-26-72; C. R. Naylor, 103-31-72; Charles Fair, 104-32-72; D. R. MacBain, 108-36-72.

The players tied in the kicker's handicap for first prize are G. L. Bourne and R. H. Weatherly, net 71; for second prize, H. M. Perry, C. H. Williams, B. P. Flory, A. L. McNeill, J. D. Purcell, W. L. Allison, net 74; for third prize, F. L. Connable, W. J. Tollerton, R. C. Vilas, W. L. Conwell, S. W. Sergeant, net 75.

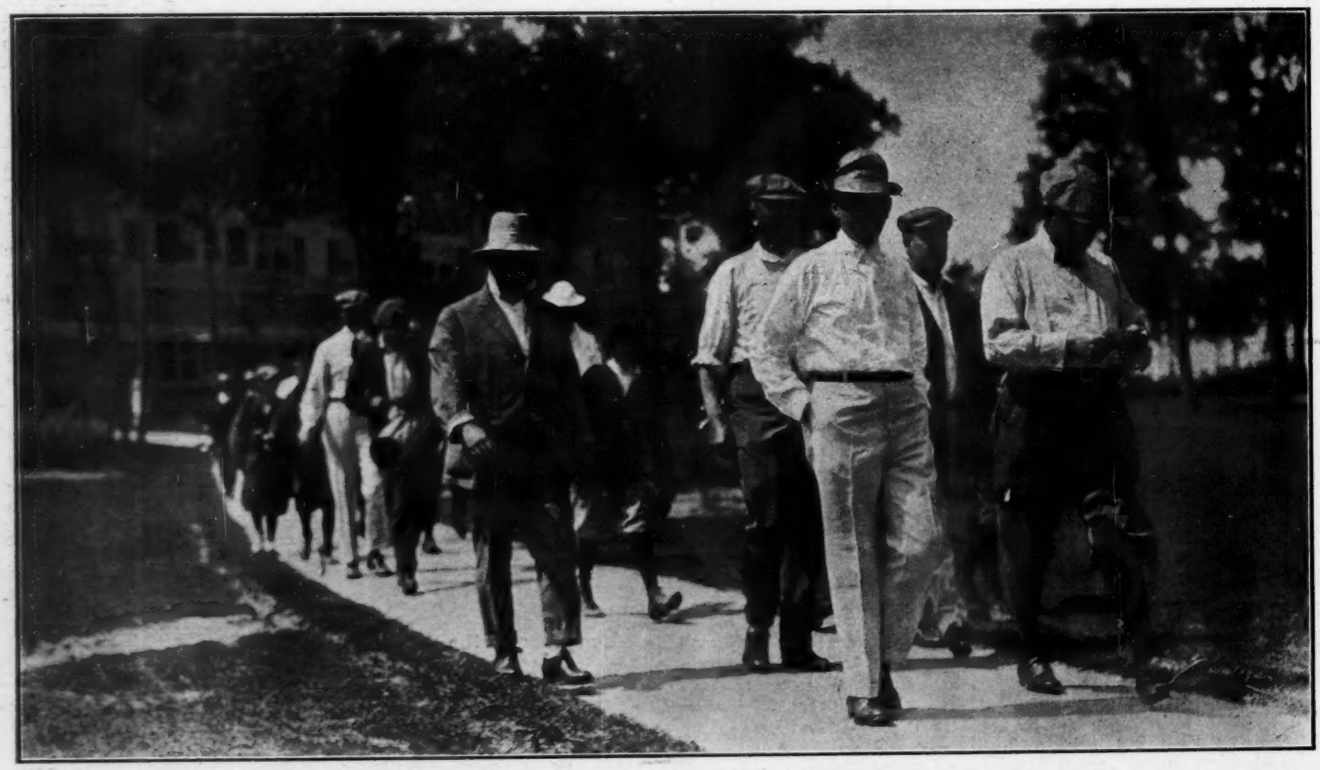
The lowest gross scores of the day were those of J. K. Bole, 80-0-80, and Charles Ripley, 86-10-76. Other low gross scores were made by S. W. Sergeant, 84; D. F. Mallory, 87; E. Quincy, 88; J. R. Prentiss, 89; G. C. Hopkins, 89; R .C. Vilas, 90; G. H. Musgrave, 90.

The weather for the tournament was perfect, except that at about 3:30 o'clock a light rain began to fall. The total number of entries was 124.

The committee in direct charge of the tournament deserves great commendation. It consisted of D. E. Sawyer, chairman; M. G. Baker, B. A. Clements, H. N. Scott, and F. H. Thompson. Chairman George R. Carr of the entertainment committee also worked very hard and effectively to make the affair a success.

The scores of the players in detail were as follows:

Name.	Gross.	Medal Play Handicap.	Net.	Kickers' Handicap.	Net.
T. W. Aishton	104	22	82	26	78
W. R. Alcorn	118	32	86	34	84
W. L. Allison	106	32	74	32	74
A. R. Ayres	116	32	84	40	76
C. L. Bardo	95	14	82	20	76
M. K. Barnum	113	27	86	41	72
C. D. Barret	133	33	100	36	97
W. F. Bauer	...	32	...	60	..
Bertram Berry	106	16	90	25	81
J. K. Bole	80	0	80	6	74
Geo. L. Bourne	121	32	89	50	71
G. R. Boyce	114	32	82	36	78
J. E. Buker	137	32	105	40	97



Going From the Club House to the First Tee

Name.	Gross.	Medal Play Handicap.	Net.	Kickers' Handicap.	Net.
C. A. Bieder	111	32	79	38	73
L. O. Cameron	101	25	76	30	71
J. T. Carrol	120	32	88	34	86
D. J. Carson	114	22	92	27	87
C. C. Castle	141	32	109	80	61
Jos. Chidley	111	32	79	31	80
H. E. Chilcoat	98	7	91	17	81
J. S. Coffin	107	22	85	26	81
W. W. Coleman	...	32	...	45	..
F. L. Connable	93	12	81	18	75
W. L. Conwell	93	15	78	18	75
Geo. T. Cooke	132	32	100	42	90
G. J. Costello	97	20	77	25	72
T. C. DeRossett	92	12	80	15	78
John Dixon	118	32	86	36	82
C. C. Elmes	129	36	93	41	88
B. F. Ernst	108	25	83	32	76
Chas. Fair	104	32	72	40	64
C. B. Field	93	5	88	14	79
B. P. Flory	118	36	82	44	74
H. A. Giles	99	14	85	17	82
T. H. Goodnow	126	36	90	40	86
W. W. Griswald	115	36	79	45	70
H. S. Hammond	111	28	83	27	84
C. A. Hardy	118	22	96	45	73
C. B. Harris	92	12	80	19	73
R. T. Hatch	118	22	96	35	83
Geo. E. Howard	116	32	84	35	81
O. C. Hayward	113	32	81	Out of Kickers, took no handicap.	
B. A. Hegeman	150	32	118	80	70
H. A. Hegeman	132	24	108	25	107
G. C. Hopkins	89	12	77	12	77
Clayton Ingraham	91	5	86	13	78
W. L. Jeffries, Jr.	115	30	85	42	73
B. T. Jellison	113	27	86	40	73
B. V. H. Johnson	114	22	92	30	84
L. E. Jones	117	32	85	35	82
J. M. Keller	136	32	104	45	91
T. D. Kelley	95	12	83	18	77
W. O. Kellog	140	32	108	40	100
D. F. Mallory	87	6	81	11	76
D. M. Knox	132	32	100	40	92
W. G. Krausen	135	32	103	45	90
W. T. Kyle	...	28	...	35	..
D. R. McBain	108	36	72	30	78
R. McCarty	127	32	95	40	87
J. E. McCauley	112	27	85	27	85
A. L. McNeill	104	20	84	30	74
A. McRae	114	28	86	37	77
H. C. May	105	26	79	28	77
Burton W. Mudge	105	22	83	26	79
G. H. Musgrave	90	8	82	18	72
C. R. Naylor	103	31	72	26	77
F. M. Nellis	127	32	95	41	86
G. A. Nichol	101	26	75	35	66
E. F. Oates	99	7	92	12	87
H. L. Osman	113	18	95	30	83
A. E. Ostrander	134	32	102	43	91
W. H. Patterson	104	12	92	20	84
H. M. Perry	114	25	89	40	74
G. A. Post, Jr.	98	26	72	30	68
J. R. Prentis	89	9	80	17	72
J. D. Purcell	104	27	77	30	74
E. Quincy	88	14	74	16	72
P. M. Ripley	117	22	95	21	96
Chas. Ripley	86	10	76	7	79
F. Schaff	121	32	89	42	79
S. W. Sergeant	84	4	80	9	75
Chas. A. Schroyer	111	31	80	26	85
G. E. Scott	100	17	83	27	73

JUST BEFORE THE BATTLE, MOTHER!

Top Row, Left to Right—L. O. Cameron, R. F. Carr, B. P. Flory, Alex. Turner. Second Row, C. T. Donahue, D. R. MacBain, M. K. Barnum, J. S. Coffin, B. W. Mudge. Bottom Row, J. D. Purcell, J. T. Carroll, Clement Street and E. H. Walker.

Name.	Gross.	Play Handi-cap.	Net.	Kickers' Handi-cap.	Net.
H. N. Scott	93	9	84	12	81
J. S. Seeley	116	32	84	40	76
E. Shassburger	110	26	84	30	80
J. S. Sheafe	127	36	91	45	82
E. E. Silk	125	32	93	37	88
A. H. Sisson	...	22	...	25	..
G. F. Slaughter	117	28	89	32	85
G. W. Spear	118	32	86	41	77
C. F. Street	107	24	83	26	81
L. E. Thomas	106	18	88	27	79
H. G. Thompson	...	17	..	30	..
H. J. Tierney	149	36	113	70	79
W. J. Tolferton	118	36	82	43	75
Alex. Turner	115	28	87	30	85
R. C. Vilas	90	5	85	15	75
E. H. Walker	117	24	93	45	72
Wm. Wampler	103	26	77	30	73
N. M. Wilson	99	13	81	15	84
R. H. Weatherly	106	28	78	35	71
J. V. Wescott	105	30	75	40	65
Earl Wheeler	98	7	91	16	82
F. H. Whitney	135	32	102	40	95
D. T. Williams	130	32	98	50	80
C. H. Williams	94	10	84	20	74
L. A. Williams	118	32	86	46	72
T. W. Williams	101	25	76	28	73
W. L. Wilt	106	30	76	30	76
R. H. Wyld	98	14	84	18	80
C. H. Young	105	17	88	21	84

THE PURDUE DINNER

The Purdue graduates in attendance at this year's convention, enjoyed their customary get-together dinner Saturday evening, at the Shelburne. Notwithstanding the fact of its being an "off" year, the Purdue boys are very proud of the representation they have been able to muster by virtue of their connection with railway mechanical affairs. Among those registered to date and otherwise known to be present, are the following:

C. D. Barrett, Pennsylvania R. R., Williamsport, Pa.; B. F. Bilsland, General Electric Co., Chicago; J. T. Carroll, Baltimore & Ohio R. R., Baltimore Md.; E. G. Chenoweth Chicago, Rock Island & Pacific Ry., Chicago; H. W. Coddington, Norfolk & Western Ry., Roanoke, Va.; E. E. Chapman, A. T. & S. F. Ry., Topeka, Kan.; Chas. Ducas, Jacobs-Shupert Locomotive Firebox Co., New York; L. E. Endsley, University of Pittsburgh, Pittsburgh, Pa.; F. B. Ernst, American Steel Foundries, Chicago; E. L. Grimm, Northern Pacific Ry., St. Paul, Minn.; N. E. Gee, Pennsylvania R. R., Altoona, Pa.; E. E. Greist, Pennsylvania Lines West, Ft. Wayne, Ind.; R. J. Himmelwright, American Arch Co., New York; H. A. Hoke, Pennsylvania R. R., Altoona, Pa.; J. M. Henry, Pennsylvania R. R., Pittsburgh, Pa.; Tabor Hamilton, Pennsylvania Lines East, Chambersburg, Pa.; F. T. Huston, Pennsylvania Lines West, Ft. Wayne, Ind.; Fred Hartman, General Electric Co., New York; J. H. Jaschka, National Malleable Castings Co., San Francisco; J. R. Jackson, A. T. & S. F. Ry., Topeka, Kan.; D. M. Knox, American Car & Foundry, Chicago; J. M. Lammedee, *Railway Review* Chicago; "Bud" Leet, Pennsylvania R. R., West Philadelphia, Pa.; Fred Mathews, Standard Railway Equipment Co., Chicago; B. B. Milner, New York Central R. R., New York; R. R. Mitchell, Crocker-Wheeler Co., Ampere, N. J.; J. R. Mitchell, H. W. Miner Co., Chicago; Sam. Morgan, B. M. Jones Co., Inc., Boston, Mass.; J. E. Muhlfeld, Consulting Engineer, New York; H. C. May, Monon Route, La Fayette, Ind.; J. P. Neff, American Arch Co., New York; C. D. Porter, Pennsylvania R. R., Altoona, Pa.; A. K. Reading, The Bettendorf Co., Davenport, Ia.; G. P. Robinson, Interstate Commerce Commission, Washington, D. C.; W. L. Robinson, Baltimore & Ohio R. R., Baltimore, Md.; E. E. Silk, The Bettendorf Co., Chicago; F. A. Schaff, Locomotive Superheater Co., New York; A. G. Vogt, Pennsylvania R. R., Altoona, Pa.; A. O. Van Dervoort, H. G. Hammet Co., Troy, N. Y.; R. B. Watson, Erie R. R., Meadville, Pa.; Prof. L. W. Wallace, Purdue University, La Fayette, Ind.; J. C. Whitridge, Buckeye Steel Castings Co., Columbus, O.; O. C. Wright, Pennsylvania Lines West, Ft. Wayne, Ind.

AS OTHERS SEE US

If the daily newspapers are no more accurate in reporting other things than they are in telling their readers of what happens in Atlantic City during the mechanical conventions we are fearful of the consequences. It has been suggested by some of the officers of one of the associations that it might be advisable to have a press committee to censor the news and prevent the correspondents sending out such misleading and distorted information.

The following, for instance, is taken from the *New York Times* of Saturday morning:

> Failure of the Committee on Resolutions to offer any possible changes in the present system of railroading created no little surprise at the closing session today of the Master Mechanics' Association.
>
> Not even one variation was mentioned, although recommendations were made favoring electrical equipment, as the committee members concede the days of steam railways are numbered.

The first paragraph is absolutely unintelligible to those who are familiar with the work of the Master Mechanics' Association. How the correspondent got his material for the second paragraph from Mr. Quereau's splendid report on electrification is a question.

Apparently the article which was published in the *Atlantic City Review* on the same morning is not intended to be serious, but it throws an interesting side light on some of the phases of the exhibition which have attracted the attention of outsiders. The article which appeared on the first pages is signed Peggy Prattle and is headed, "Car Builders' Convention—Why Exhibits Have Unique Interest for Both Sexes." Near the end of the column we find these words:

> They also had all kinds of novelties such as apple corers, knife sharpeners, siphon corks and table sweepers,—just the things to win a woman's heart and make her happy.
>
> After all, isn't this the main object of the Master Mechanics and Master Car Builders Convention? The nicest girl in the world is usually the inspiration for all the fine things an American man accomplishes.

ADDITIONAL MASTER CAR BUILDERS' REGISTRATION

Acker, Charles L., M. M.; Toledo Terminal; Armstrong.
Alter, William, Shop Supt.; Erie; Pennhurst.
Andrewcetti, Jos. A., Asst. Elec. Engr.; C. & N. W.; Dennis.
Andrews, S. B., M. E.; Seaboard Air Line; Shelburne.
Ayers, A. H., Prin. Asst. Engr.; N. Y. C.; Blenheim.
Barrett, R. W., M. C. B.; N. & S.; Lexington.
Beaghen, Thos., M. C. B.; Union Tank Line; Traymore.
Beaumont, H. A., G. F. C. S.; B. & O.; Dennis.
Boyer, Chas. E., Genl. Car Inspt.; P. R. R.; Runnymede.
Carson, G. E., D. M. C. B., N. Y. C.; Dennis.
Case, S. T., Special Inspector; N. Y. C.; Pennhurst.
Caton, S. W., G. C. I.; Western Maryland; Monticello.
Chamberlin, Eugene, Manager Clearing House; N. Y. C.; Blenheim.
Chenowith, E. G., M. E.; Rock Island; Chalfonte.
Coleman, James, S. C. D.; Grand Trunk; Traymore.
Corinth, A. B.; G. I.; A. C. L.; Dennis.
Craig, James, C. D.; B. & M.; Chelsea.
Crawford, D. F., G. S. M. P.; Penna. Lines.
Crone, S. A., Ex Prest.; Dennis.
Demarest, H. N., G. C. I.; P. R. R.; St. Arita Apts.
Deyat, Frank, A. C. F.; N. Y. C.; Pennhurst.
Everett, Ira, G. C. I.; L. V.; Dennis.
Felton, Henry, Pres.; Union Trunk Line; Traymore.
Finegan, L. E., Supt. of Shops; B. & O.; Blenheim.
Fritts, J. C., M. C. B.; D., L. & W.; Traymore.
Gardner, G. C., G. M. F. P.; P. R. R.; Blenheim.
Gernert, Henry, F. C. D.; C. R. R. of N. J.; Edison.
Gorrell, W T., M. C. B.; P. & R.; Monticello.
Givins, E. F., M. E.; P. S. & N.; Overbrook.
Goodnow, T. H., A. S. C. D.; C. & N. W.; Blenheim.
Hall, W. H., C. C. I.; C. R. R. of N. J.; Arlington.
Harvey, H. H., G. C. F.; C., B. & Q.; Traymore.
Hasbridge, R. B., S. C. D.; P. & R.; Dennis.
Hendry, John, M. C. B.; Grand Trunk; Traymore.
Hennessey, J. J., M. C. B.; C., M. & St. P.; Chalfonte.

Hensen, E. W., Elec. Engr.; I. C.; Dennis.
Hessenbruch, T. E., Gen. Insp.; P. & R.; Haddon Hall.
Hogarth, Wm., Cuhady Refr. & Tank Lines; Chalfonte.
Kalbaugh, I. N., S. M. P.; Coal & Coke; Seaside.
Lentz, John S., M. C. B.; L. V.; Dennis.
Lynn, Samuel, M. C. B.; P. & L. E.; Pennhurst.
Manchester, H. C., S. M. P.; D., L. & W.; Traymore.
McGary, Alex., Supt. Car Ltg.; N. Y. C.; Alamac.
McMullen, John, M. S.; Erie; Traymore.
McMunn, W. R., Gen. Car Inspector; N. Y. C.; Shelburne.
Mehan, Jas. E., A. M. C. B.; C., M. & St. P.; Overbrook.
Miller, E. T., G. C. I.; B. & M.; Chelsea.
Munroe, J. T., Shop Supt.; Erie; Pennhurst.
Murrian, W. S., S. M. P.; Southern; Shelburne.
Mussey, Wm. H., A. E. M. F.; Long Island; Runnymede.
O'Brien, J. J., S. C. D.; St. Louis Merchants' Bridge Term.; Pennhurst.
Parks, O. J., C. C. I.; Penna. Lines; Traymore.
Peiffer, Charles E., G. C. I.; B. R. & P.; Brighton.
Prendergast, A. P., S. M.; T. & P.; Chelsea.
Prendergast, A. P., S. M.; T. & P.; Chelsea.
Richardson, W. P., M. E.; P. & L. E.; Pennhurst.
Rockfellow, W. E.; Gen'l Car Foreman; N. Y. C.; Pennhurst.
Robertson, E. J., Supt. Car. Dept.; M., St. P. & S. S. M.; Traymore.
Russum, T. H., Supt. Pass. Car Dept.; B. & O.; Dennis.
Sandman, A. G., Chief Drafts., M. P. Dept.; B. & O.; Haddon Hall.
Schrader, J. R., Gen. Foreman; N. Y. C.; Dennis.
Seeger, J. C., Shop Supt.; L. V.
Seifert, S. P., Supt. Car Dept.; N. & W.; Shelburne.
Selloy, Sam H., G. F. C. D.; B. & A.; Pennhurst.
Shearer, R. D., A. D. G. F.; N. Y. C.; Arlington.
Simms, H. A., Trav. Car Insp.
Sitterly, W H., General Car Inspector; P. R. R.; Blenheim.
Sloan, J. R., Eng. Elec. Car Lighting; P. R. R.; Dennis.
Smith, A. E., A. M. C. B.; Union Tank Line; Traymore.
Smith, Benjamin T., General Foreman; W. J. & S.
Smith, R. E., C. S. M. P.; A. C. L.; Chelsea.
Stark, F. H., General Supt.; Chalfonte.
Swanson, Charles H., Supt. Car Shops; A., T. & S. F.
Systrom, K. F., Chief Draftsman; Grand Trunk; Traymore.
Thiele, Charles F., General Car Inspector; Penna. Lines; Traymore.
Thompson, W. O., M. C. B.; N. Y. C.; Blenheim.
Treleaven, Thomas A., M. C. B.; Grand Trunk.
Van Buren, C. W., Master Car Builder; C. P. R.
Westervelt, Jos., M. C. B.; N. Y. C.; Minneapolis Cottage.
Wilson, James W., Chief Jt. Inspt.; N. Y. C.; Monticello.
Wilson, E. D., Genl. Car Inspt.; P. & R.; Monticello.
Zweibel, C. A., Supv. C. R.; A. C. L.; Chalfonte.

ADDITIONAL MASTER MECHANICS' REGISTRATION

Allison, W. L., West. Sales Mgr.; American Arch Co.; Blenheim.
Chamberlin, E., Manager Clearing House; N. Y. C.; Blenheim.
Crawford, D. F., G. S. M. P.; Penn. Lines; Brighton.
Crosby, R. M., Gen. M. M.; No. Pac.; Dennis.
Finegan, L. E., Supt. Shops; Blenheim.
Gardner, G. C., G. F. M. P.; P. R. R.; Blenheim.
Givins, E. F., M. E.; P. S. & N.; Overbrook.
Kalbaugh, I. N., S. M. P.; Coal & Coke; Seaside.
Kirkpatrick, James, M. M.; B. & O.; Lexington.
Maher, P., Blenheim.
Manchester, Henry C., S. M. P.; D., L. & W.; Traymore.
Murrian, W. S., S. M. P.; Southern; Shelburne.
Prendergast, A. P., S. M.; T. & P.; Chelsea.
Riegel, S. S., M. E.; D., L. & W.; Lexington.
Sandman, A. G., Chief Drafts., M. P. Dept.; B. & O.; Haddon Hall.
Sinnott, William, M. M.; B. & O.
Smith, R. E., G. S. M. P.; S. C. L.; Chelsea.
Thompson, W. O., M. C. B.; N. Y. C.; Blenheim.
Wall, George L., V. P.; Lima Loco. Corporation; Brighton.
Werst, C. W., Supt. Works; Lima Loco. & Mch. Co.; Blenheim.

ADDITIONAL SPECIAL GUESTS

Baird, B. H., Car Draftsman, So. Pac.; Strand.
Baldwin, C. D., Pur. Agent; Bangor & Aroostook; Traymore.
Barstow, Wm. A., Asst. to Pres.; Union Tank Lines.
Bateman, Frank, Director, Atlantic City Ry.
Baumbush, A. J., General Foreman; N. Y. C.
Berg, J. V., Clerk; N. Y. C.; Pennhurst.
Bigelow, C. H., Chief Mech. Engr., Millville Trac. Co.
Broderick, J. T., Ch. Cl. to V. P.; B. & O.; Brighton.
Brooke, J. C., Gen. For.; B. & O.; Tabor Inn.
Busse, F. W., Chief Clerk to Gen'l S. M. P.; B. & O.; Strand.
Butterworth, J. A., Asst. to Pur. Agt.; So.; Blenheim.
Clark, J. C., For. Boiler Maker; P. & R.
Clark, W. A., Supvr.; P. R. R.; Bathwell.
Craig, J. M., Supt. Elec. Car Lighting; P. R. R.; Shelburne.
Creach, J. B., Havana Rys.; Shelburne.
Danbach, C. O., Supt.; B. & O.; Sterling.
Deyo, Leib, Chief Order Clerk; N. Y. C.; Blenheim.
Donaghue, C. H., Gen. Foreman; N. Y. C.; Pennhurst.
Dunlap, W. J., Storekeeper; B. & O.; Emmett.
Flannagan, Harry, M. C. B. Clerk; Great Northern.
Gainy, J. J., M. C. B.; Q. & C.; Chalfonte.
Geoghegan, T. T., Mech. Engineer; C. N. O. & T. P.; Chalfonte.
Gority, John, Gen. For.; P. R. R.; Traymore.
Gustin, W. M., C. C. I.; Ban. & Aroos.; Haddon Hall.
Hale, Arthur, Chairman Com. on Relations; Brighton.
Hale, Arthur, Genl. Agent; Amer. Ry. Assn.; Brighton.
Hall, John M., Interstate Commerce Com.
Hayes, J. C., M. C. B. Bill Clerk; N. Y. C.; Pennhurst.
Henry, H. B., Asst. to Dir. of Pur.; So. Pac.; Chelsea.
Heyden, Thos. Vander, Draftsman; P. R. R.; Shelburne.
Hutchison, W. M., Vice President; Union Tank Line; Traymore.
Kapp, J. B., Asst. M. M.; P. R. R.; Ardmore.
Keirn, Wm. H., Supt. Car. Lighting; P. R. R.; Shelburne.
Keyes, J. A., Mechan. Dept.; Southern; Netherlands.
Kimmett, A. D., M. M.; Lackawanna & Wyoming R. R.
Ladd, G. T., Penna. Lines; Brighton.
Lacy, H. S., Storek.
Livingston, Ralph, Gen. For.; B. & O.; New Willard.
Long, M. A., Asst. to Ch. Engr.; B. & O.; Dennis.
Lowe, V. J., For. Car Shop; P. & R.; Somerset.
Lyman, C. J., Insp. Pc. Wk.; B. & O.; Tabor Inn.
Martz, M. E., Gen. For.; B. & O.; Lexington.
Maurer, W. R., M. E.; N. Y., N. H. & H.; Haddon Hall.
McCracken, J. T., Mast. Paint., Interb.; Alamac.
Milner, B. B., Engineer Motive Power; N. Y. C.; Chalfonte.
Mionand, R. R., New York Railways Co.; Shelburne.
Montague, W. T., Genl. Foreman; P. R. R.; Traymore.
Moses, Edwin P., Chief Car Draftsman; N. Y. C.; New England.
Murray, J. J., Secretary; N. Y. C.; Pennhurst.
Nutt, A. S., Brighton.
O'Brien, J. J., Supt. Car Dept.; Term. of St. L.; Pennhurst.
Page, S. D., Gen. Car For.; Ban. & Aroos.; Haddon Hall.
Parsell, W. O., Asst. Storek.; P. R. R.
Pipka, Frank J., Foreman; P. R. R.; Columbia Place.
Portner, W. H., Supt. Shops, Q. & C.; Silverside.
Prendergast, J. F., M. M.; East Broad Top R. R.; Chalfonte.
Ramsdell, T. M., M. C. B.; O. W. R. R. & N.; Chalfonte.
Ripley, P. M., Asst. to V. P., El. P. & So. W.; Blenheim.
Robinson, W L., Supervisor Fuel Consumption; B. & O.; New Chatham.
Scatchard, H., Gen. Storek.; N. & W.; Traymore.
Schmidt, F. W., Loco. Draftsman; S. P.; Devonshire.
Seiders, J. P., For. Black.; P. R. R.; Albemarle.
Sexton, R. E., C. E.; Panama R. R.; Alamac.
Shand, A. C., Ch. Engr.; P. R. R.; Haddon Hall.
Sinnott, William, M. M.; B. & O.
Skilling, John K., Special Acct.; B. & O.; Haddon Hall.
Smith, J. A. B., Rear Admiral U. S. Navy.
Smith, J. J., Gang For.; B. & O; Willard.
Sprong, J. W., Pur. Agt.; D. & H.; Traymore.
Stevens, Mr. Edward, P. R. R.; St. Arita Apts.
Strohmer, J. F., Secy. to Gen. M. M.; B. & O.; Wellsboro.
Thomas, F. W., Supt of Sigs.; A., T. & S. F.; Traymore.
Thomas, F. E., Bellefonte Cent.; Stanton.
Van Gundy, C. P., Ch. Chem.; Test. Dept.; B. & O.; Craig Hall.
Wall, Geo. L., V. Pres.; Lima Loco. Corporation; Brighton.
Weist, Charles W., Supt.; Baldwin Locomotive Works; Blenheim.
Wertz, Cyrus, Mast. Paint.; P. & R.; Risley.
Willson, S. M., Chalfonte.
Woodward, J. A., P. W. Insp.; B. & O.; Willard.
Zimmerman, G. W., Gen. Foreman Car Shops; P. & R.; Somerset.

FOREIGN VESSELS ADMITTED TO AMERICAN REGISTRY.—The total number of foreign-built vessels admitted to American registry under the act of August 18, 1914, up to April 17 was 137 with a gross tonnage of 489,508. The number of sailing, steam and unrigged vessels built in the United States in March was 111, of 24,538 gross tonnage.

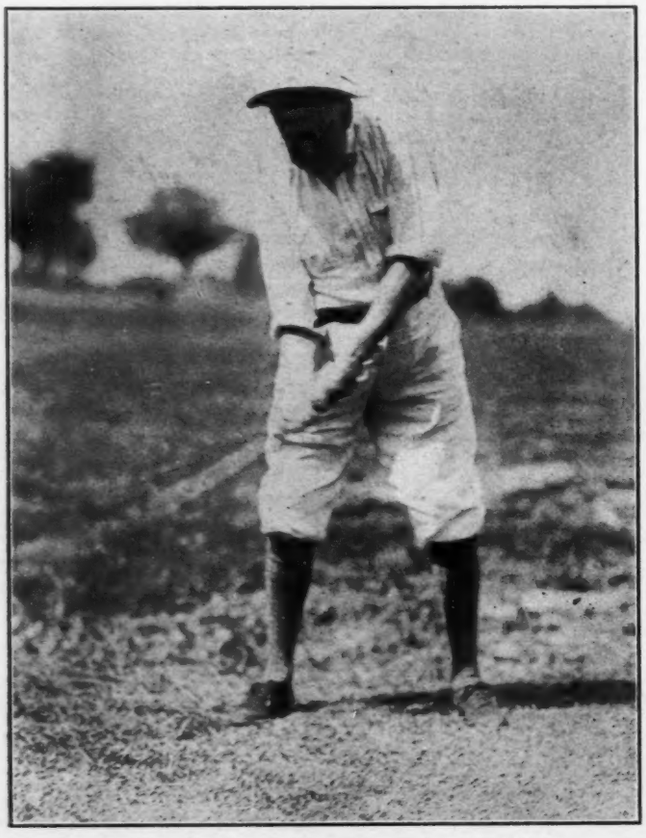
Conventionalities

George W. Rink, mechanical engineer of the Central Railroad of New Jersey, has just been honored with an appointment in the Railway Committee of the American Society of Mechanical Engineers.

H. T. Bentley has during the past year joined the ranks of "grandfathers," being automatically appointed through the birth of Margaret Oadams Bentley, the daughter of Mr. and Mrs. Walter H. Bentley.

Daniel Brady is attending his forty-second consecutive convention, the first one he attended being held in New York City in 1875. In those days most of the railroad men brought their families with them.

For a little chap Hiram Hammett, of Troy, is surely holding down some pretty big jobs. A month ago he was elected president of the Chamber of Commerce and Troy is already beginning to loom up larger on the map.



C. F. Quincy (Q. & C. Co.), Keeping His Eye on the Ball

Stanley Bullard, vice president of the Bullard Machine Tool Company, will not be at the conventions this year. He recently underwent a serious operation, from which we can with pleasure report that he is recovering very nicely.

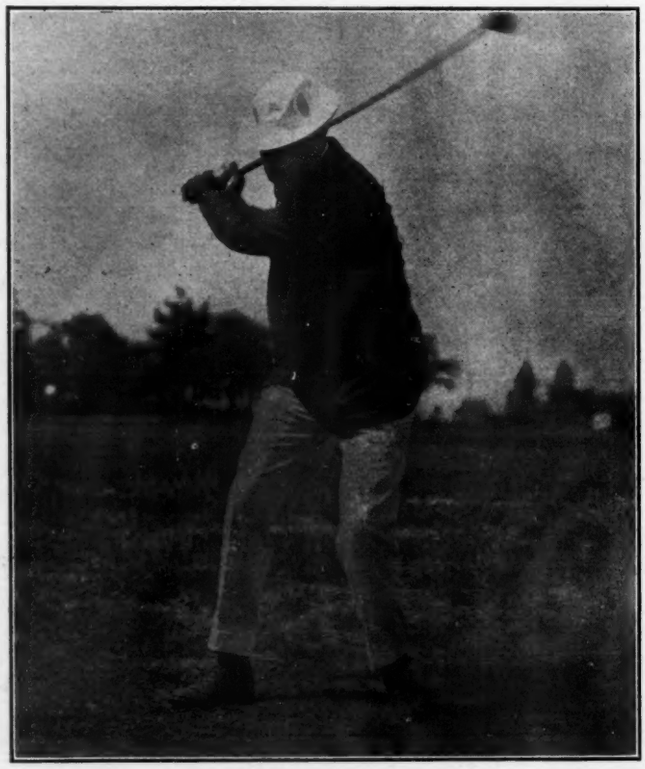
August W. L. Hartbauer, formerly of the railway sales-organization of the McCord Manufacturing Company of Detroit, Mich., has been promoted to the position of superintendent of the automobile radiator, gasket lubricator and railway appliances department.

O. C. Cromwell, mechanical engineer of the Baltimore & Ohio, had quite a serious operation for appendicitis several months ago, from which he has hardly yet fully recovered. He is looking fine, however, and expects shortly to get back on the job.

Mrs. J. W. Fogg, who has been a regular attendent at the conventions will not be here this year on account of the illness of her father, Reverend Dr. Kennedy Marshall. Her many friends hoped to see her here with her 4-year old daughter Elizabeth Mary.

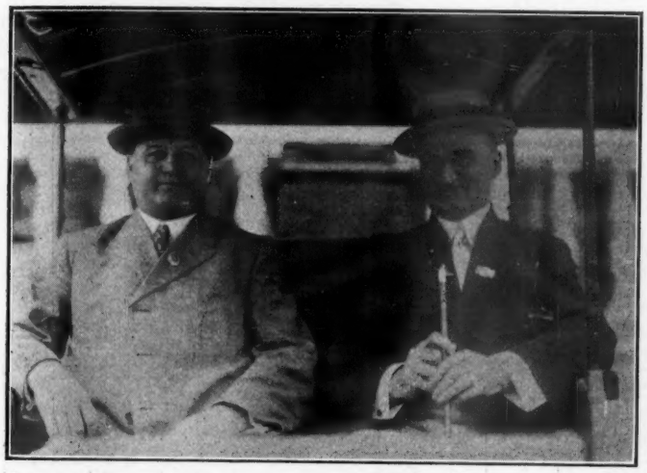
Arthur J. Merrill, Secretary, Southern & Southwestern Railway Club, and Mrs. Merrill

W. L. Robinson, supervisor of fuel consumption of the Baltimore & Ohio, has been attending the conventions for twelve years. This time he was only able to get away long enough to spend Sunday on the Pier, it being necessary to hurry back to attend a monthly meeting of the operating officers.



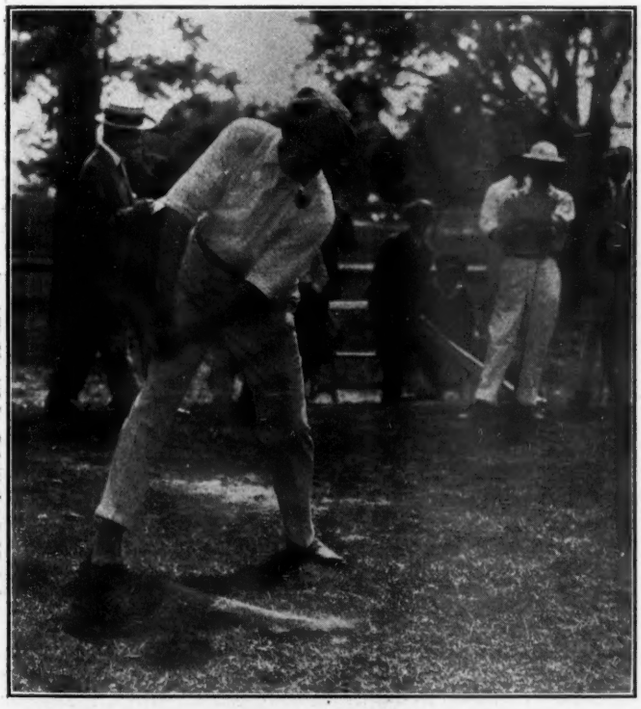
S. P. Bush, Buckeye Steel Castings Co., at the Top of His Drive

Our friend, Stephen C. Mason, of the McConway & Torley Co., was a little late in getting here, and the cigars have not yet arrived; but he took the time to call at the *Daily* office the first thing Saturday morning and leave a copy of his prescription for eternal youth. It reads, "don't worry!"



Left to Right—Jas. J. Connors, Asst. Supt. Motive Power, C. M. & St. P., and J. W. Fogg

E. L. Chollman, of the Southern Locomotive Valve Gear Company, says that throughout the south and southwest there is an undercurrent of optimism, a feeling that business is on the upclimb, and that the railroads are gradually beginning to feel the impetus of new business and renewed confidence,



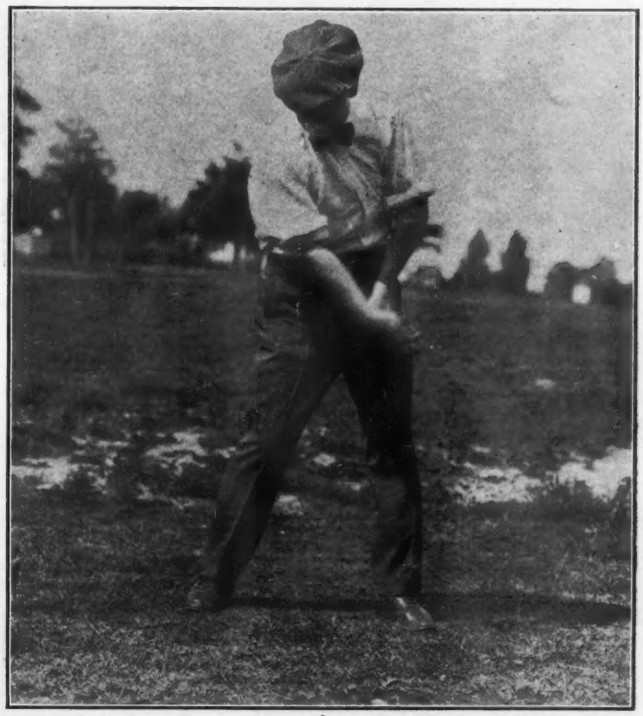
D. R. McBain's Club Was Faster than the Camera

Oscar P. Wilkins, master painter, Norfolk & Western, past president of the Master Car & Locomotive Painters' Association is attending the M. C. B. convention. He reports very prosperous times on the N. & W. Since the first of March the Roanoke shops have been operating full force and full time.

Chairman George R. Carr, of the entertainment committee, is sorry because Mrs. Carr is not able to be with him at the conventions, but he is perfectly satisfied with the cause of her absence. That cause is that they have at their home a little daughter who is now only three months old. The young lady, who has been named Katherine, is getting along finely.

S. S. Riegel, mechanical engineer of the Delaware, Lackawanna and Western, reports that dynamometer car tests are being made of the Pacific type locomotive equipped with his water tube firebox. A second engine fitted with one of these fireboxes will be delivered to the road by the American Locomotive Company within the next two or three weeks.

"There is something wrong about this war order business," says W. W. Melcher, of the Mass. Mohair Plush Company. "All other railway equipment companies seem to be so favored as to stand in the very path of many easy orders from Europe, but not the mohair plush trade. Blankets—even corduroy—has been in demand by the armies abroad. The



E. H. Bankard, Purchasing Agent, B. & O., Makes a Practice Stroke!

war order plays about mohair plush like fitful lightning but never hits.

Through the inadvertent (?) burning of Scott's garage in Chicago last week, the mechanical fraternity of the Central West suffered the loss of one of the most famous monuments thus far known to this horseless age; the suffering being the more acute on account of the wide-spread common interest (?) held in this machine. A stick of "Polarized" is said to have short circuited the pilot light. Fortunately there was no insurance.

Word has just been received from William V. Dee, of the G. Drouve Company, Bridgeport, Conn., that he will not be at the convention this year. Will Dee was for so many years identified with these conventions, first in the capacity of a staff member of the *Daily* and later in his present connection, that his friends are many. All regret to learn that his physician has ordered him to take a month's vacation in order to rebuild an overworked system.

L. M. Schechter, chief engineer and commercial manager of the Russia Locomotive & Machine Company, Kharkoff, Russia, is a visitor at the conventions. Mr. Schechter is in the United States for the purpose of studying American rail-

way mechanical conditions and equipment and purchasing machine tools. He says that largely because of the conditions arising from the war in Europe, the trade relationship between Russia and the United States is likely to be much closer in the future than it has been.

The Pittsburgh & Lake Erie men all have their families with them this year. Dave Redding, master mechanic, is accompanied by his wife and his niece, Miss E. G. Leonard. His son Robert is also helping at the enrollment booth. Sam

C. W. Cross and His Son Who Has Just Finished His Special Apprenticeship Course on the N. Y. C. at Elkhart

Lynn, master car builder, has Mrs. Lynn and his daughter with him. W. P. Richardson, mechanical engineer, is accompanied by his wife and seven-year-old daughter, Alice. Mrs. Redding and Mrs. Lynn have attended several conventions, but this is the first one for Mrs. Richardson.

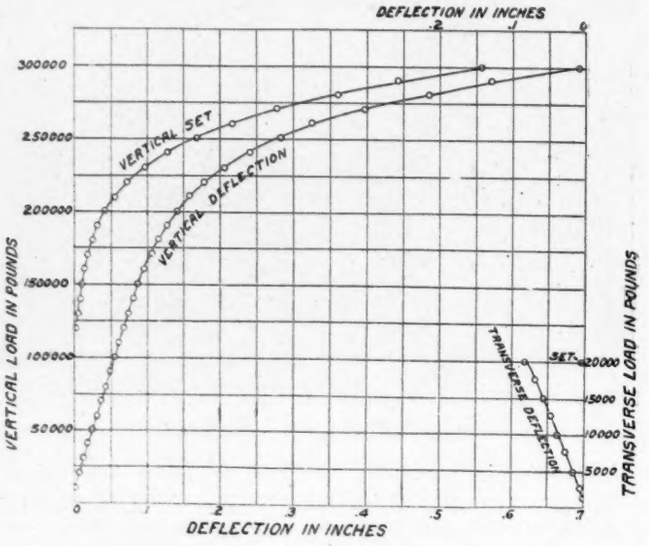
The entertainment committee deserves to be especially commended for the plans it made for the carnival dance on Friday night and the great success with which it carried them

L. A. Richardson, Mech. Supt., First District, C. R. I. & P. and Mrs. Richardson

out. Probably no entertainment feature in connection with the conventions was ever more enjoyed. Furthermore, as economy is the keynote of everything done in the railway and railway supply businesses these days, it is worth while to mention the fact that this function was remarkably inexpensive. The total amount which the committee spent for it did not exceed $75. In spite of this, the scene after the serpentine balloons and paper hats and caps had been distributed was as attractive as the entire party was merry.

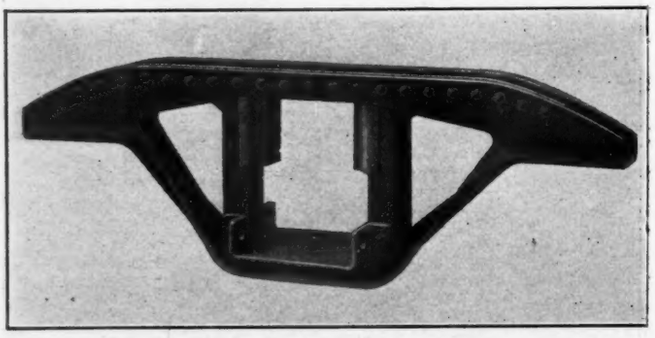
FORGED STEEL TRUCK SIDE FRAME

The Allegheny Steel Company, Pittsburgh, presents this year a new forged steel truck side frame of interesting design. The illustrations give a very clear idea of its construction. It is made up of three pressed steel members riveted together. The compression and tension members are pressed from one piece, and the columns and spring seat support from another. The third piece is a channel stiffener riveted to the top member as indicated in the illustrations. Bolster



Deflection and Set Tests on Forsyth Forged Steel Truck Side Frame

wearing strips are riveted to each column and a spring plank support is riveted to the bottom member of the frame. The weight of the frame is approximately 480 lb. It was designed and patented by W. D. Forsyth to meet the requirements of the high capacity cars. From tests made by Professor L. E. Endsley, of the University of Pittsburgh, it was found that with a vertical load of 68,500 lb. and a transverse load of 9,000 lb. the maximum stress obtained at any one section was 13,500 lb. This occurred at three points in the



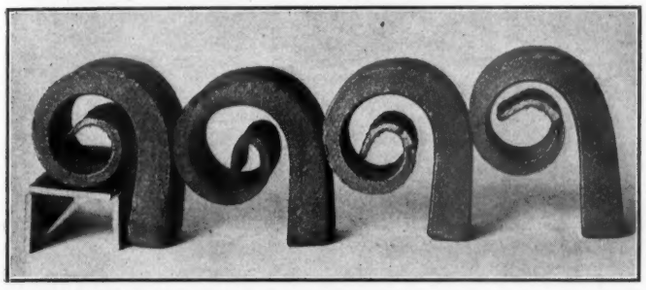
Forsyth Forged Steel Truck Side Frame

frame. The deflection and set of the frame was taken in increments of 10,000 lb. up to 320,000 lb., after which the frame was loaded to destruction, the maximum load being 473,600 lb. The results of these tests are shown in the accompanying curve. It will be noted that for a load of 150,000 lb. the deflection was .09 in. and the set .01 in.

FLEXIBLE CONNECTIONS.—In the article describing the flexible connections made by the Barco Brass & Joint Company, published in the *Daily*, of June 11, page 1285, it was indicated that these joints were used exclusively for water lines. Their principal uses are in steam, air and oil lines, the use on water lines being limited.

MALLEABLE IRON EXHIBIT

The National Malleable Castings Association is exhibiting a number of malleable iron castings made from a mixture said to produce a metal which is similar to mild steel in many of its physical characteristics. The association is made up of about 30 manufacturers of malleable castings for the purpose of improving the quality of their product and of conducting an educational campaign as to the possibilities of this material. The mixture exhibited has recently been developed after about two years of research work.



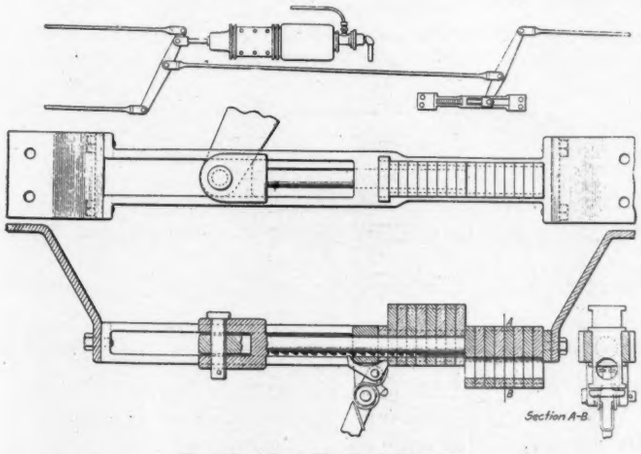
Malleable Iron Wedges Tested Under a Drop Hammer

The illustration shows the result of subjecting wedges of this material to a drop hammer test, indicating its toughness. It is claimed that malleable sections may be produced with a thickness as great as two inches and the material may be machined without detriment to its physical qualities. Micro-photographs are included in the exhibit showing the structure of the metal at all stages of its manufacture.

SLACK ADJUSTER FOR BRAKE EQUIPMENT

To provide a convenient means of manually taking up the slack and adjusting the piston travel on foundation brake gears the device shown in the illustration has been developed and is being exhibited by the H. W. Johns-Manville Company, New York. As shown it is applied to the fixed end of the floating lever but is equally adapted for use on any other part of the brake gear where piston travel may be adjusted from one point.

The frame of the device, which is attached to the car body,



Freight Car Slack Adjuster

has a four-bar section at one end and a two-bar section at the other. The four bars serve as guides for the jaw connection on the end of the thrust rod, to which the end of the floating lever is pinned. Between the two bars, which open vertically, are placed a number of blocks or shims, the lower ends of which are provided with holes for the passage of the thrust rod. These are retained between the bars by means of flanges at the top and bottom but have a considerable amount of vertical play. The thrust rod is fitted with ratchet teeth on its under side, these being engaged by a lever-operated pawl.

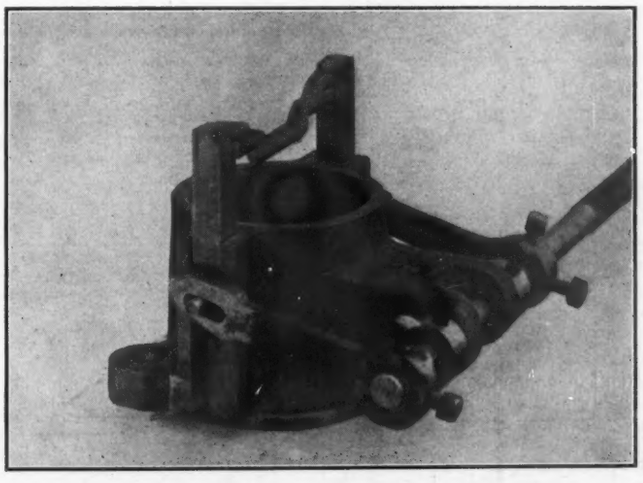
When assembled the thrust rod passes through a guide in the frame and thence through the shims which are raised to their upper position to bring the holes in line. To take up slack it is only necessary to move the thrust rod ahead by means of the lever and ratchet until one or more of the shims is free from the end of the rod, when they will drop down and close the opening for the rod.

This device makes it unnecessary to crawl under the truck and take up the slack by removing the cotter keys and shifting the lever from hole to hole in the brake rod jaw. By providing a means of taking up the slack at one conveniently located point under the car it is expected to result in more uniform attention to proper adjustment of the slack and consequently in more uniform piston travel.

VARIABLE EXHAUST NOZZLE

In discussing J. Snowden Bell's paper on Variable Exhausts, presented during the Friday morning session of the American Railway Master Mechanics' Association convention, C. A. Seley referred to a variable exhaust nozzle developed by F. Mertsheimer, superintendent motive power and car department of the Kansas City, Mexico & Orient. This device is in use on a number of engines, some of which have been equipped since September, 1914.

The nozzle is cast with lugs on one side through which is run a shaft which extends out through the left side of the smokebox. A stepped bridge 7-16 in. wide is guided in vertical slots on the outside of the nozzle. This is con-



Variable Exhaust Nozzle in Use on the Kansas City, Mexico & Orient

nected to the shaft by arms which raise or lower it as the shaft is turned. An arm one the end of the shaft outside of the smokebox is connected to the operating lever in the cab by a reach rod. In its lower position the bridge extends down into the nozzle and it may be raised to a clear height of 1⅜ in. above the top of the nozzle.

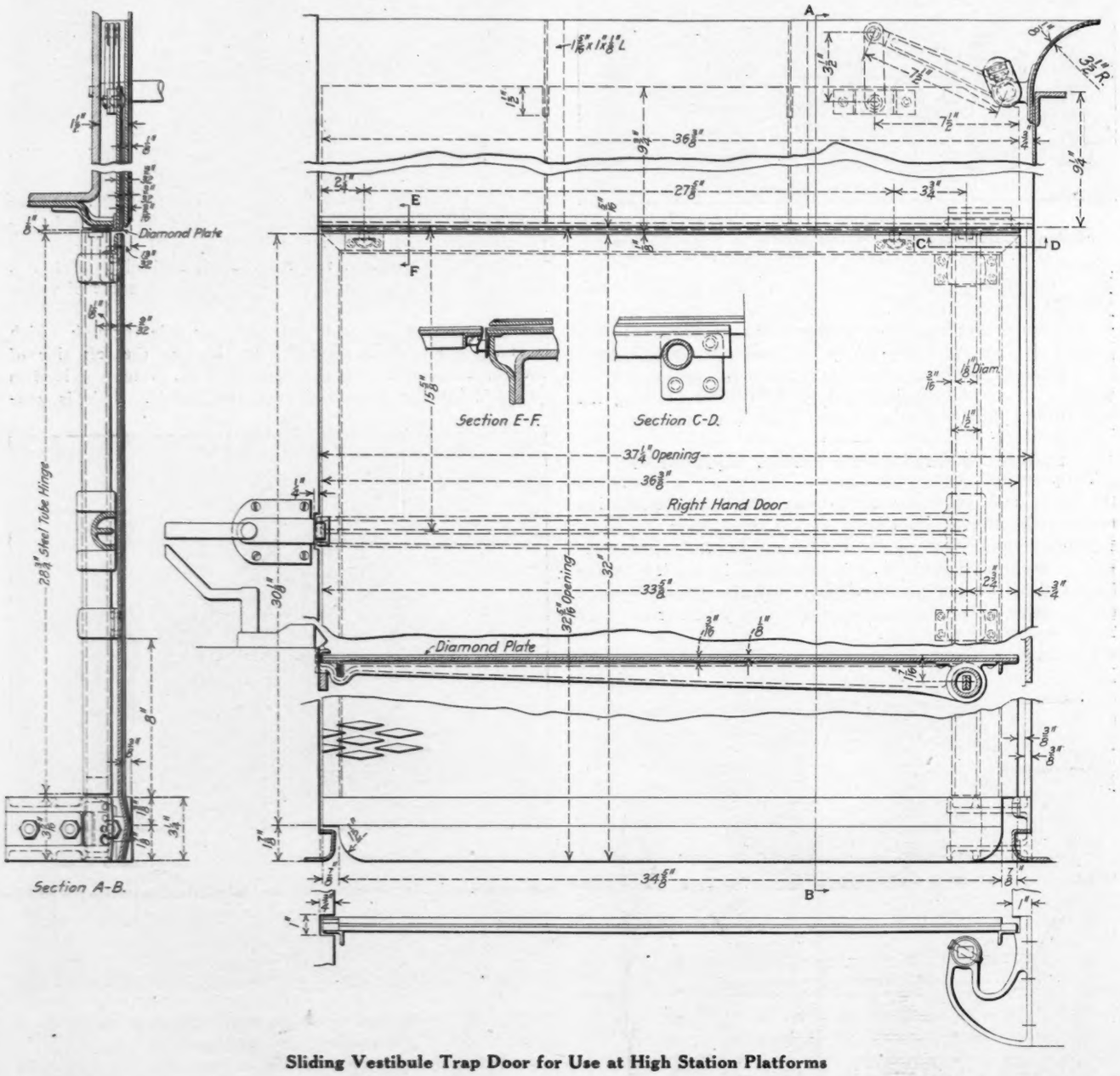
In applying it to nozzles which have been running with round nozzles, unbridged, the new nozzles are made ⅛ in. larger than the old ones. Where the old tips are bridged the new ones are made ⅛ in. smaller than those replaced. This results in a larger opening when the movable bridge is raised in either case. Considerable saving in coal is said to have followed the application of these nozzles and it has eliminated steam failures. Their use has also effected considerable reduction in the amount of fire cleaning required on the road and at terminals. The device has been patented by Mr. Mertsheimer.

SLIDING VESTIBULE TRAP DOOR

The trap door shown in the illustration is designd to slide laterally beyond the side of the car when discharging and taking on passengers at high station platforms. There is usually a dangerous gap between the side of the car and the edge of such platforms and the purpose of this trap is to insure safety at such points.

Aside from the sliding feature the door operates in the usual manner. It is pivoted on a hinged tube which contains the torsional spring bar, and near the center of which is placed a stationary arm of malleable iron. This bar extends entirely across the under side of the door and is turned up at the end to form the latch plate. The door itself is free to slide on the hinge tube and is operated by a mast and handle located near the end door post. The mast is connected by a lever and link to a slide plate located under the car platform and to which the trap door is attached when closed. By turning the operating handle the slide is forced outward and in turn moves the door which slides through slots provided in the vestibule door casing. When it is extended beyond the side of the car the slots in the casing prevent the trap door from being opened.

This device is now in service on a number of cars and is manufactured by the O. M. Edwards Company, Inc., Syracuse, N. Y., in whose exhibit it may be seen.

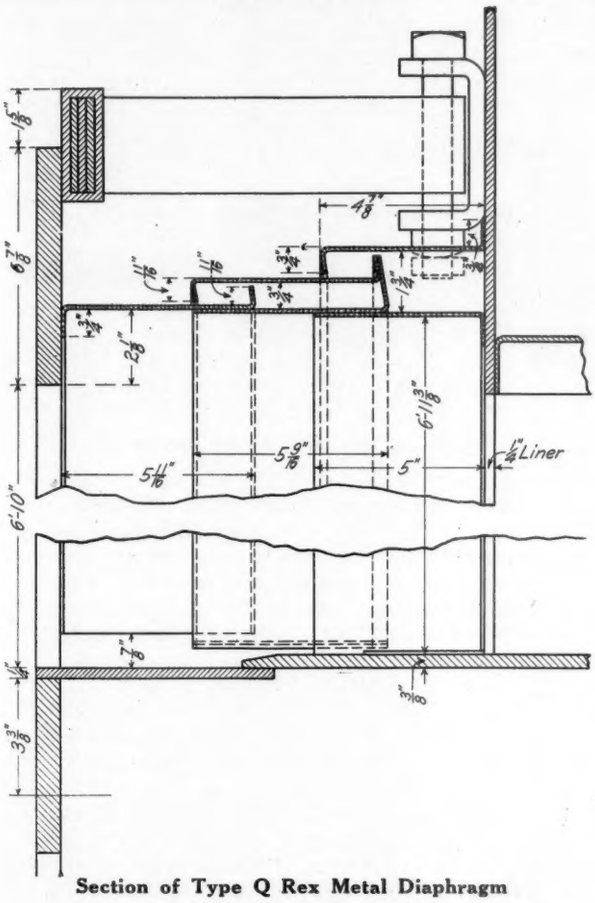


Sliding Vestibule Trap Door for Use at High Station Platforms

LONG TRAVEL FRICTION DRAFT GEAR.—A friction draft gear having a travel of 3¼ in. has been designed by the Gould Coupler Company, New York, and is being exhibited at the booth of this company during the convention. The design is such that the gear will go into the recommended M. C. B. pocket space and the friction elements are the same as in the gear having 2½ in. travel. Owing to the increased travel, however, it was impossible to use coil springs for releasing the friction elements and the release rigging is made up of leaf springs which give the additional travel and also a high release capacity. In order to avoid confusion in taking apart and assembling the gear the release spring elements are assembled before being placed in the gear which is assembled complete in a casing of substantial design. This gear has a capacity of 300,000 lb.

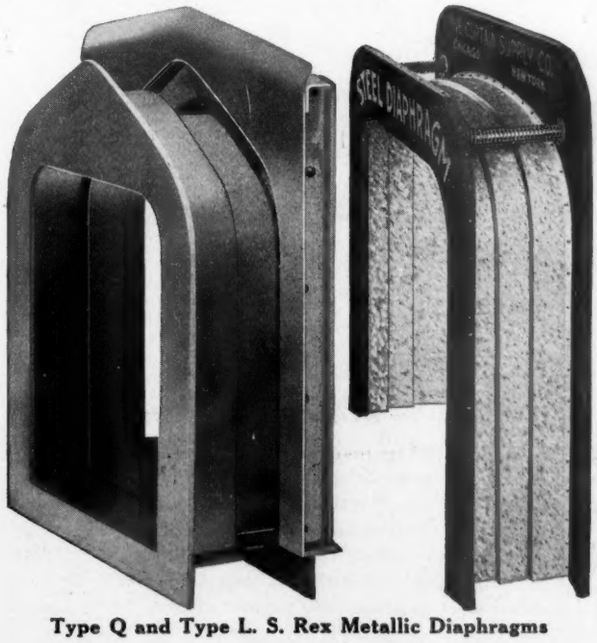
REX METAL DIAPHRAGMS

One of the interesting improvements in passenger train equipment that has just been placed on the market is the Rex metal diaphragms. The Curtain Supply Company, Chicago, has taken over the two-piece diaphragms known as type *L. S.*, and the

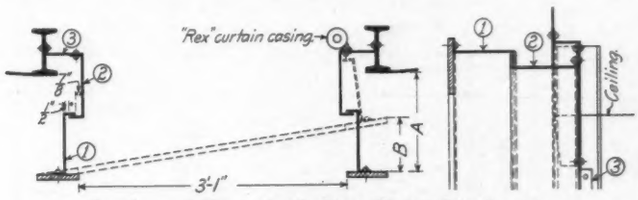


Section of Type Q Rex Metal Diaphragm

three-piece diaphragm, known as type *Q*. Both these diaphragms have been in successful operation on the Lake Shore and Chicago, Burlington & Quincy, respectively. By referring to the illustration shown herewith the construction of both types may be readily understood. They perform all the functions of the present diaphragms, being fireproof, waterproof, dustproof, flexible and may be applied to all types of existing equipment presenting no difficulties in being used in connection with equipment provided with the old diaphragms. In addition, their chief characteristic is their substantial construction. There is no question but they will outlive the present duck diaphragms and it is expected that they will last for the life of the car.



Type Q and Type L. S. Rex Metallic Diaphragms

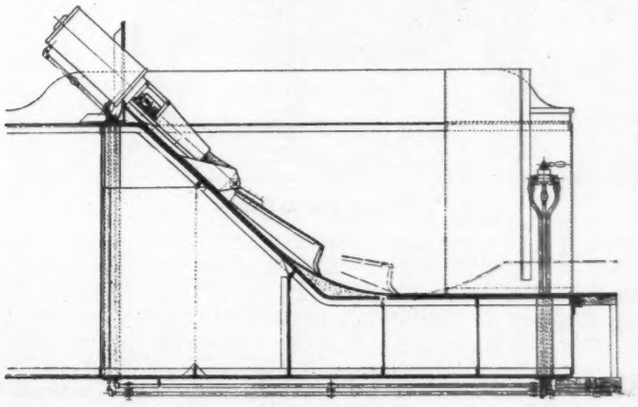


Section of Type L. S. Rex Metal Diaphragm

The *Q* type lends itself particularly to application to existing equipment, as it can be applied with no alteration to the end construction. The *L. S.* type in some cases will require slight alterations in the vestibule end post. On new equipment either may be applied with equal facility. Both types of diaphragms are supported in the customary manner.

LOCOMOTIVE COAL PUSHER

A coal pusher designed for application to the tenders of existing locomotives with a minimum amount of attention, is being exhibited by the Locomotive Stoker Company, Schenectady, N. Y. The cylinder is mounted on a sheet placed over the back and bottom coal pit sheets and covering the original shovel sheet. Secured to this sheet are two steel bars which form the guides for the crosshead. A shield casting extends down over the piston rod, which is thus entirely covered, an extension on the crosshead moving up into the shield when the pusher is in its upper position. The crosshead extends across the coal pit and is designed to form a pushing shoulder to assist in breaking up



Sectional View of Tender With Coal Pusher and Elevated Shovel Plate

and moving the coal forward. To it is hinged an apron which forms the main pushing member.

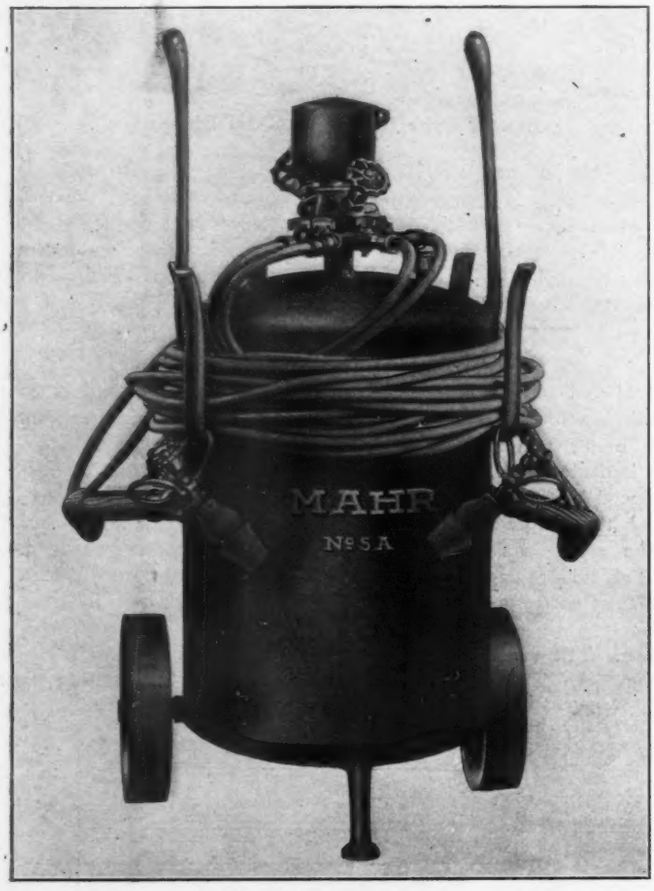
The pusher, being located under the coal pile, tends to break up the entire body of coal should it be frozen, and works it forward to the shovel sheet in condition for handling. As shown in the illustration, the operating valve is located above the tender deck near the coal gates. It may be placed on the cylinder, however, and be operated by a lever and reach rod. The tank sheets are subjected to no additional stresses due to the operation of the coal pusher because the entire equipment is a unit assembled on the sheet covering the bottom and back of the coal pit.

A raised shovel sheet is shown in broken lines on the drawing, the purpose of which is to raise the coal to the level of the fire door.

PAINT BURNER

The paint burning outfit, illustrated herewith, is designed to use kerosene as fuel. The usual method of burning paint is with gasolene and the introduction of the kerosene burning equipment is for the purpose of reducing the danger involved in the use of gasolene as fuel about the paint shop.

The torches of the outfit operate on the atomizing principle and require cleaning less frequently than would torches of the generating type due to the formation of carbon in the generating tubes and small gas outlets. The torches are



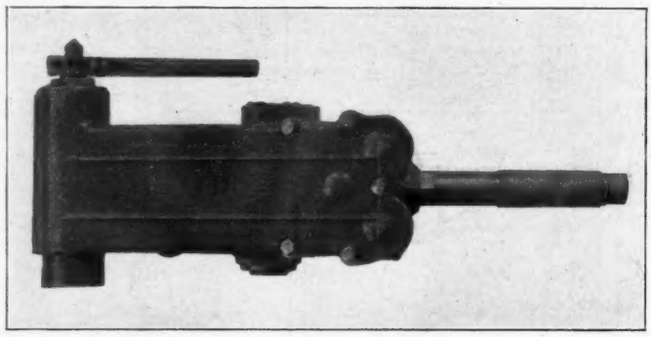
Kerosene Paint Burner

light and conveniently arranged for handling and the size of flame may be readily varied by the operator to meet the requirements of the work. The equipment is designed to operate with any air pressure from 10 lb. to 125 lb. per sq. in. An outfit, consisting of two torches and a fuel tank, is on exhibit at the booth of the Mahr Manufacturing Company, Minneapolis, Minn.

LIGHTING FEATURE OF THE BABCOCK WATER GLASS GUARD.—Changes in the design of the Babcock water glass guard have been made during the past year which have considerably increased the serviceability of this device. In general design it consists of two parts—the back, which includes the ends and packing glands and is provided with an outlet at the bottom for steam and broken glass; and the removable front, which contains the sight glasses. The change of greatest importance consists in the redesign of the front casing to include a narrow slot at the apex of the angle between the sight glasses in front of which the gage lamp is placed. The light thus admitted thoroughly illuminates the interior of the guard and clearly indicates the water level in the gage glass. This device is on exhibit at the booth of the American Car and Ship Hardware Manufacturing Company, New Castle, Pa.

CLOSE QUARTER DRILL

A recently designed drill for use in close quarters is shown in the illustration. It is being exhibited by the Ingersoll-Rand Company, New York. The motor is of the three-cylinder type, controlled by a valve of the same design as used in the regular line of "Little David" drills, manufactured by this company. The valve is geared to the crank shaft, which obtains its motion from three rocking levers con-



Drill for Use in Confined Spaces

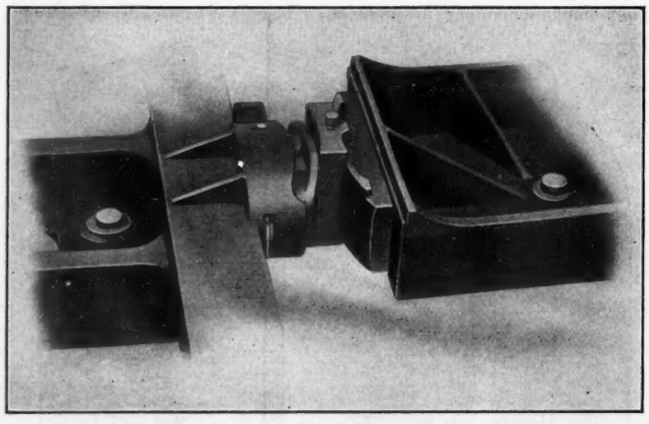
necting the pistons to the drill spindle. As may be seen in the photograph, the throttle is located in the handle.

The design of this drill is simple and rugged and it is adapted to all work in confined spaces. It has few parts, and is therefore easy to overhaul and assemble. The movement of the spindle is steady and the motor is claimed to require one-fifth less air than others of a similar type.

RADIAL BUFFER

A radial buffer is being exhibited by the Economy Devices Corporation, New York, which has been designed to provide for all movement between the engine and tender whether vertical, horizontal or rolling. It is made in two types, one in which the tender buffer is provided with twin springs for taking up the slack and the other in which a wedge is used, the latter being shown in the illustration.

The essential features of this buffing device consist of a chafing plate on the tender, having a vertical cylindrical surface, a spherical chafing plate on the engine and a floating block one side of which is spherically curved to conform to the engine chafing plate and the other radially curved to



Radial Buffer Having Universal Movement

conform to the chafing plate on the tender. Vertical movements are taken care of between the surface of the tender chafing plate and the floating block; horizontal movements by the sliding of both chafing plates on the surfaces of the floating block, and rolling movements between the surfaces of the floating block and the spherical chafing plate. All parts are cast steel with specially treated wearing surfaces.